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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
UBILES, MARIE C	

ART UNIT	PAPER NUMBER
2642	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/918,855	BERGER, HARVEY L.	
	Examiner	Art Unit	
	Marie C. Ubiles	2642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 July 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☒ Claim(s) *9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 9 is objected to because of the following informalities: the limitations of page 31 are an exact copy of one another Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 7-9, 11, 13-14, 17-19 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Perahia et al. (US 6,320,850).

As for claim 1, Perahia et al. discloses a method for providing communications data, in a satellite communications network, between user terminals and a ground station via a satellite comprising (or a "method for maximizing satellite downlink information rate", See Abstract, lines 1-2): generating at least one carrier signal in a spot beam covering user terminals (See Step 242, Fig. 3; the "user terminals" read on Step 230, 1 to N user channels), said carrier signal conveying communications data over at least one downlink to the user terminals (See Col. 5, lines 21-37, Steps 232-240); and

modulating a single carrier signal simultaneously with first and second independent communications data streams over first and second modulation channels, respectively, (or "resultant multiplexed data stream", See Col. 5, lines 64-65) of a multi-dimensional modulator (See Col. 3, lines 44-48 and Col. 5, lines 55-61).

As for claim 9, Perahia et al. discloses a method for providing communications data, in a satellite communications network, between user terminals and a ground station via a satellite (or a "method for maximizing satellite downlink information rate", See Abstract, lines 1-2), comprising: generating at least one carrier signal spot beam covering terminals (See Step 242, Fig. 3; the "user terminals" read on Step 230, 1 to N user channels), said carrier signal conveying communications data over at least one downlink the user terminals (See Col. 5, lines 21-37, Steps 232-240); and modulating a single carrier signal simultaneously with first and second independent communications data streams over first and second modulation channels, respectively, (or "resultant multiplexed data stream", See Col. 5, lines 64-65) of a multi-dimensional modulator (See Col. 3, lines 44-48 and Col. 5, lines 55-61); and limiting an entire communications link with first terminal one channel said multi-dimensional modulator (as read on "data channel for user A...", See Col. 6, lines 9-19).

As for claim 11, Perahia et al. discloses a satellite system comprising multiple terminals (the "user terminals" read on Step 230, 1 to N user channels); a satellite generating a beam (See Fig. 3, Step 242), said beam defining a

coverage area of said beam ("coverage area" is a property of a beam, and thus inherent), said satellite using a common carrier signal to transmit data to multiple terminals located in said beam (See Col. 3, lines 44-48); and a ground station (or ground transmitter 102/ground receiver 110, See. Fig. 2) including a multi-dimensional modulator having at least two input channels receiving first and second separate data streams associated with independent communication links with first and second terminals, respectively, the modulator assigning the first and second data streams to first and second dimensions, respectively of a multidimensional modulator (See Col. 3, lines 48-60).

As for claim 14, Perahia et al. discloses a satellite system comprising multiple terminals (the "user terminals" read on Step 230, 1 to N user channels); a satellite generating a beam (See Fig. 3, Step 242), said beam defining a coverage area of said beam ("coverage area" is a property of a beam, and thus inherent), said satellite using a common carrier signal to transmit data to multiple terminals located in said beam (See Col. 3, lines 44-48); and a ground station (or ground transmitter 102/ground receiver 110, See. Fig. 2) including a multi-dimensional modulator having at least two input channels receiving first and second separate data streams associated with independent communication links with first and second terminals, respectively, the modulator assigning the first and second data streams to first and second dimensions, respectively of a multidimensional modulator (See Col. 3, lines 48-60); and an encoder (or quality encoders 1 and 2) for encoding first and second communications data streams based on different encoding rates (See Col. 5, lines 55-61) and providing first

and second encoded communications data streams to first and second encoded communications data streams to first and second input channels of said modulator, respectively (See Col. 6, lines 9-19 and Col. 7, lines 23-31).

Claim 13 is disclosed by Perehia et al. in Col. 6, lines 9-19.

Claim 21 is rejected for the same reasons as claim 14.

Claims 7-8 and 17-19 are rejected for the same reasons as claim 9.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2-6, 10, 12, 15-16, 20 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perahia et al. (US 6,320,850).

As for claim 6, Perahia et al. discloses a method for providing communications data, in a satellite communications network, between user terminals and a ground station via a satellite (or a "method for maximizing satellite downlink information rate", See Abstract, lines 1-2), comprising: generating at least one carrier signal spot beam covering terminals (See Step 242, Fig. 3; the "user terminals" read on Step 230, 1 to N user channels), said carrier signal conveying communications data over at least one downlink the user terminals (See Col. 5, lines 21-37, Steps 232-240); and modulating a single

carrier signal simultaneously with first and second independent communications data streams over first and second modulation channels, respectively, (or "resultant multiplexed data stream", See Col. 5, lines 64-65) of a multi-dimensional modulator (See Col. 3, lines 44-48 and Col. 5, lines 55-61); and limiting an entire communications link with first terminal one channel said multi-dimensional modulator (as read on "data channel for user A...", See Col. 6, lines 9-19).

As for claim 12, Perahia et al. discloses a satellite system comprising multiple terminals (the "user terminals" read on Step 230, 1 to N user channels); a satellite generating a beam (See Fig. 3, Step 242), said beam defining a coverage area of said beam ("coverage area" is a property of a beam, and thus inherent), said satellite using a common carrier signal to transmit data to multiple terminals located in said beam (See Col. 3, lines 44-48); and a ground station (or ground transmitter 102/ground receiver 110, See. Fig. 2) including a multi-dimensional modulator having at least two input channels receiving first and second separate data streams associated with independent communication links with first and second terminals, respectively, the modulator assigning the first and second data streams to first and second dimensions, respectively of a multidimensional modulator (See Col. 3, lines 48-60).

It can be seen that Perahia lacks the limitations "modulating the first communications data stream over the first and second modulation channel of a QAM modulator; and simultaneously modulating the second communications data stream over a third modulator channel of the QAM modulator" and "said

modulator assigning said first communications data stream to a first terminal located near an edge of said coverage area of said beam; and said modulator assigning said second communications data stream to a second terminal located near a center of the coverage area of the beam".

In regards to the aforementioned limitations, Perahia's system teaches that modulation of the data stream may be performed by a Quadrature Phase Shift Keying (QPSK) and Binary Phase Shift Keying (BPSK) (See Col. 4, lines 61-64 and Col. 7, lines 10-13) and gives an example in which two users (A and B) within the same coverage area receive different rates on encoding based on weather conditions (See Col. 6, lines 3-19).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use QAM modulation, as it is just one of different types of modulation available in the art and calculating the distance from center in order to decide the level of encoding of the data stream based on the teachings of Perehia regarding measuring SNR of the user channels in order to calculate interferance (i.e. in this case, based on weather).

Claim 16 rejected for the same reasons as claim 6.

Claim 2-5, 15 and 22-24 are rejected for the same reasons as claim 12.

Regarding claim 20, Perahia et al. discloses a satellite system comprising multiple terminals (the "user terminals" read on Step 230, 1 to N user channels); a satellite generating a beam (See Fig. 3, Step 242), said beam defining a coverage area of said beam ("coverage area" is a property of a beam, and thus

inherent), said satellite using a common carrier signal to transmit data to multiple terminals located in said beam (See Col. 3, lines 44-48); and a ground station (or ground transmitter 102/ground receiver 110, See. Fig. 2) including a multi-dimensional modulator having at least two input channels receiving first and second separate data streams associated with independent communication links with first and second terminals, respectively, the modulator assigning the first and second data streams to first and second dimensions, respectively of a multidimensional modulator (See Col. 3, lines 48-60).

It can be seen that Perahia lacks the limitation "at least one of said multiple terminals comprising: a processor, at a terminal, attempting to establish a communications link between said terminal and satellite over a first modulation channel defined by the multi-dimensional modulator, said processor determining that the first modulation channel is not carrying data directed to said terminal; and a switch controlled by the processor to switch to another modulation channel after determining that the first modulation channel was incorrect".

Perahia teaches that "control hardware 252" locates at a "network operations center on the ground" determines which of the 1 to M multiplexed data signals will receive (or priority selector) which quality of level of encoding and which of the 1 to M multiplexed signals may be dropped (See Col. 6, lines 29-57). Thus it would have been obvious to one of ordinary skill in the art at the time the invention that control and switching means may exist inside the network operation center (i.e. terminal) in order to determine not only which level of encoding of a multiplexed signal, but to select a priority according to any suitable

criteria (i.e. to avoid giving higher encoding services to users that paid for lower level encoding services).

Claim 10 is rejected for the same reasons as claim 20.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Zehavi et al. (US 6,005,855) discloses a method and apparatus for providing variable rate data in a communications system using statistical multiplexing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marie C. Ubiles whose telephone number is (571)272-7491. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ahmad Matar can be reached on (571) 272-7488. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marie C. Ubiles
March 16, 2005.

BING Q. BUI
PRIMARY EXAMINER